

REMARKS

Claims 7-36 are pending in the present application. In the Office Action mailed February 27, 2006, the Examiner rejected claims 7-33 under 35 U.S.C. §102(e) as being anticipated by Jaszcak et al. (USP 6,639,469 – hereinafter Jaszcak). The Examiner next rejected claims 34-36 under 35 U.S.C. §103(a) as being unpatentable over Jaszcak.

Applicant appreciates the allowability of claims 1 and 4-6.

Before addressing the Examiner's rejections, Applicant will address an apparent typographical error in the Office Action. The Examiner has withdrawn the rejections of claims 1 and 4-6 and has indicated that claims 1 and 4-6 are allowable. *See Office Action, Feb. 27, 2006, pp. 2, 4.* However, in the rejection of claims 7-33 under 35 U.S.C. §102(e), the Examiner stated that "Jaszcak et al anticipate all claimed features in claims 1-34." *Id. at 2.* Since the Examiner indicated that claims 1 and 4-6 are allowable, it is believed that the Examiner's statement that Jaszcak anticipates all claimed features in claims 1-34 is a typographical error. As such, Applicant requests correction thereof.

Rejections

In responding to Applicant's remarks filed December 14, 2005, regarding claims 7-33, the Examiner stated:

In dependent [sic] claims 7, 16, and 25 merely recites [sic] that the fluid or fluidic chamber having [sic] plurality of protrusion [sic]. This limitation is met ion [sic] Jaszcak et al as shown in figure 2, 34. Although the simulation of the feature in 34 is for liver and lung, the simulation does indeed feature multiple protrusion [sic] of body organ. The fact that the disclosure is not limited to liver or lung inferentially be apply [sic] to other organs such as heart chamber simulation already disclosed by Jaszcak et al.

Office Action, supra at 2.

Applicant disagrees with the Examiner that claims 7, 16, and 25 "merely recite" that the fluid or fluidic chamber has plurality of protrusions. That is, claims 7, 16, and 25 are not limited to merely a fluid or fluidic chamber having a plurality of protrusions. However, and notwithstanding, the "liver" of Jaszcak fails to anticipate the elements as called for in claims 7, 16, and 25 under 35 U.S.C. §102(e). That is, that the "simulation of the feature in 34" may "indeed feature multiple protrusion[s]" does not, in and of itself, anticipate that called for in claims 7-33.

Jaszcak teaches that "forms representing, for example, the lungs 32 and liver 34 within a human torso are integral with or mounted to the tank 22 wall and extend into the tank." *Col. 4, lines 5-7.* Jaszcak also teaches that "[f]luid surrounds the left ventricular assembly 14 and

simulated non-cardiac thoracic structures 32, 34, 36.” *Col. 7, 57-59*. Further, Jaszcak illustrates the liver structure in Figs. 1 and 2.

Claim 7 calls for, in part, a balloon defining a fluid chamber and having an inlet and a plurality of outlets. Claim 7 also calls for, in part, a plurality of tubes corresponding in number to the plurality of outlets, each tube connected to the balloon and having an inlet fluidly connected to an outlet of the balloon. Jaszcak fails to teach or suggest (1) that the liver structure is a fluid chamber having an inlet and a plurality of outlets, (2) that the liver structure has a plurality of tubes connected thereto, or (3) that each tube is connected to the liver structure and has an inlet fluidly connected to an outlet of the liver structure.

With regard to the left ventricular assembly, the provisional application from which Jaszcak claims priority discloses a “left ventricular assembly” that “comprises a hollow double-layered latex balloons 22, 24 in an ellipsoid shape which approximates the size and shape of the left ventricular portion of a human heart.” *U.S. Ser. No. 60/209,520, p. 3, ll. 7-9*. As shown in the corresponding Fig. 5, the provisional application discloses a left ventricular phantom (12) that is comprised of a pair of overlapping balloons (22, 24) that share a common fluid inlet (32). The inlet (32) is connected to a fluid delivery system (14) that includes a tubing (28) and a pump assembly (30). As such, the only disclosure of the non-provisional application that is enabled by the provisional application is that of a left ventricular phantom having a single inlet and absent any outlets or protrusions.

As is well-known, the human heart consists of four general chambers: the right atrium, the right ventricle, the left atrium, and the left ventricle. The left ventricle is primarily responsible for pumping blood through the aortic valve into the aorta, which is the main artery of the human body. The left ventricle is typically characterized by thicker muscle than the other heart chambers because it must pump blood to the rest of the body against much higher pressure in the general blood circulation. The provisional application of Jaszcak discloses a heart phantom that is focused on the left ventricle of the heart system to mimic motion only in the left ventricle in a cardiac cycle. To this end, the provisional application of Jaszcak discloses a “left ventricular assembly”. *Id.* As such, not only does the provisional application not disclose a balloon having a plurality of outlets, the provisional application also fails to teach a plurality of tubes connected to the balloon outlets.

As indicated above, the Examiner stated that “[t]he fact that the disclosure is not limited to liver or lung inferentially be apply [sic] to other organs such as heart chamber simulation already disclosed by Jaszcak et al.” *Office Action, supra at 2*. However, the Examiner’s

statement is grammatically confusing, and the idea that the Examiner was trying to convey is unclear. Is the Examiner, for example, attempting to suggest that the protrusions of the liver structure may be inferentially added to the left ventricular assembly structure? Or is the Examiner, for example, attempting to suggest that a dynamic cardiac ventricle may be simulated via the liver structure? Whether or not the Examiner is attempting to make these suggestions, Jaszczak does not teach, suggest or support adding protrusion structure to the left ventricular assembly or simulating a dynamic cardiac ventricle via the liver structure.

Accordingly, that which is called for in claim 7 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 7, and the claims which depend therefrom, are patentably distinct over the art of record.

Claim 16 calls for, in part, a computer program that includes the act of supplying fluid to a phantom including an expandable fluidic chamber having a plurality of expandable tubes connected thereto. The computer program of claim 16 further includes the acts of slowly emptying and rapidly emptying fluid from the expandable fluidic chamber and rapidly supplying and slowly supplying fluid to the expandable fluidic chamber.

As indicated above, the Examiner stated that claim 16 “merely recite[s]” that the fluid or fluidic chamber has plurality of protrusions and that the liver simulation features multiple protrusions. Accordingly, Applicant interprets that the Examiner considers that the protrusions of the liver structure anticipate the plurality of expandable tubes connected to an expandable fluidic chamber. However, there is no teaching or suggestion that Jaszczak’s “liver” structure is an expandable fluidic chamber. While, as stated above, Jaszczak discloses that this “liver” structure is integral with or mounted to the tank wall and extends into the tank (See col. 4, lines 5-7), Jaszczak fails to disclose any material properties of the form that represents the liver. That is, Jaszczak fails to teach or suggest that the liver form is an expandable fluidic chamber.

Besides failing to disclose any material properties of the form that represents the liver, Jaszczak has no disclosure regarding an interior volume of the liver structure. That is, Jaszczak does not teach or suggest emptying fluid from or supplying fluid to the liver structure. As such, the liver structure of Jaszczak clearly does not anticipate the expandable fluidic chamber as set forth in the limitations of claim 16.

Furthermore, with regard to the left ventricular assembly, Jaszczak discloses cap members that “are formed from flexible, resilient material allowing them to expand and contract like the heart muscle.” *Col. 4, lines 43-45*. However, the left ventricular assembly does not have a plurality of expandable tubes fluidly connected thereto. As such, like the liver structure, the left

ventricular assembly does not anticipate the expandable fluidic chamber of claim 16. As stated above, Jaszczak further does not teach or suggest adding protrusion structure of the liver structure to the left ventricular assembly or simulating a dynamic cardiac ventricle via the liver structure.

Accordingly, that which is called for in claim 16 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 16, and the claims which depend therefrom, are patentably distinct over the art of record.

Claim 25 calls for, in part, connecting a balloon having an inlet and a plurality of tubular protrusions to a fluid reservoir and circulating fluid to and from the balloon. Applicant incorporates the remarks set forth above with regard to claims 7, and 16. That is, neither the liver structure nor the left ventricular assembly of Jaszczak have an inlet and a plurality of tubular protrusions. Further, Jaszczak fails to teach or suggest that the liver structure is either a balloon or has fluid circulated thereto and therefrom.

Additionally, adding protrusion structure of the liver structure to the left ventricular assembly or simulating a dynamic cardiac ventricle via the liver structure is neither taught nor suggested in Jaszczak.

Accordingly, that which is called for in claim 25 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 25, and the claims which depend therefrom, are patentably distinct over the art of record.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1, 4-36.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

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